

WHAT IS CLAIMED IS:

1. A method for fabricating a rotor blade for a gas turbine engine, said method comprising:

forming an airfoil including a first side wall and a second side wall that each extend in radial span between an airfoil root and an airfoil tip, and wherein the first and second side walls are connected at a leading edge and at a trailing edge; and

forming a winglet that extends outwardly from at least one of the airfoil first side wall and the airfoil second side wall, such that a radius extends between the winglet and at least one of the airfoil first side wall and the second side wall.

2. A method in accordance with Claim 1 wherein forming a winglet that extends outwardly from at least one of the airfoil first side wall and the airfoil second side wall comprises:

forming a first winglet that extends outwardly from the airfoil first side wall and is positioned a first radial distance from the airfoil tip; and

forming a second winglet that extends outwardly from the airfoil second side wall and is positioned a second radial distance from the airfoil tip.

3. A method in accordance with Claim 1 wherein forming a winglet that extends outwardly from at least one of the airfoil first side wall and the airfoil second side wall comprises: forming the winglet to structurally support the airfoil such that a natural frequency of chordwise vibration of the airfoil is increased to a frequency that is not present within the gas turbine engine during engine operations.

4. A method in accordance with Claim 1 wherein forming a winglet that extends outwardly from at least one of the airfoil first side wall and the airfoil second side wall comprises forming the winglet using an electro-chemical machining process.

5. A method in accordance with Claim 1 wherein forming a winglet that extends outwardly from at least one of the airfoil first side wall and the airfoil second side wall comprises forming the winglet to have a substantially non-rectangular cross-sectional profile.

6. An airfoil for a gas turbine engine, said airfoil comprising:

a leading edge;

a trailing edge;

a tip;

a first side wall extending in radial span between an airfoil root and said tip, said first side wall defining a first side of said airfoil;

a second side wall connected to said first side wall at said leading edge and said trailing edge, said second side wall extending in radial span between the airfoil root and said tip, said second side wall defining a second side of said airfoil; and

a winglet extending outwardly from at least one of said first side wall and said second side wall such that a radius extends between said winglet and at least one of said first and second side walls.

7. An airfoil in accordance with Claim 6 wherein at least one of said airfoil first side wall and said second side wall is concave, said remaining side wall is convex, said winglet is substantially flush with at least one of said first and second side walls at said airfoil leading edge.

8. An airfoil in accordance with Claim 6 wherein at least one of said airfoil first side wall and said second side wall is concave, said remaining side wall is convex, said winglet is substantially flush with at least one of said first and second side walls at said airfoil trailing edge.

9. An airfoil in accordance with Claim 6 wherein said winglet is a radial distance from said airfoil tip.

10. An airfoil in accordance with Claim 6 wherein said rib further configured to provide structural support to said airfoil such that a such that a natural frequency of torsional or chordwise vibration of said airfoil is increased to a frequency that is not present within the gas turbine engine during engine operations.

11. An airfoil in accordance with Claim 6 wherein said winglet comprises a non-rectangular cross-sectional profile.

12. An airfoil in accordance with Claim 6 wherein a first winglet extends outwardly from said first side wall, and a second winglet extends outwardly from said second side wall.

13. An airfoil in accordance with Claim 6 wherein said winglet is formed integrally with said airfoil using an electro-chemical machining process.

14. A gas turbine engine comprising a plurality of rotor blades, each said rotor blade comprising an airfoil comprising a leading edge, a trailing edge, a first side wall, a second side wall, and at least one winglet extending outwardly from at least one of said first side wall and said second side wall such that a radius is formed between said winglet and at one of said first and second side walls, said airfoil first and second side walls connected axially at said leading and trailing edges, said first and second side walls extending radially from a blade root to an airfoil tip.

15. An airfoil in accordance with Claim 14 wherein said winglet is formed integrally with said airfoil using an electro-chemical machining process.

16. A gas turbine engine in accordance with Claim 14 wherein at least one of said rotor blade airfoil first side wall and said second side wall is concave, at least one of said airfoil first side wall and said second side wall is convex, said at least one airfoil winglet is substantially flush with at least one of said airfoil first and second side walls at said airfoil leading edge.

17. A gas turbine engine in accordance with Claim 14 wherein at least one of said rotor blade airfoil first side wall and said second side wall is concave, at least one of said airfoil first side wall and said second side wall is convex, said at least one airfoil winglet is substantially flush with at least one of said airfoil first and second side walls at said airfoil trailing edge

18. A gas turbine engine in accordance with Claim 14 wherein said at least one airfoil winglet is a radial distance from said airfoil tip.

19. A gas turbine engine in accordance with Claim 14 wherein said at least one airfoil winglet facilitates structurally supporting said airfoil such that a natural frequency of torsional or chordwise vibration of the airfoil is increased to a frequency that is not present within said gas turbine engine during engine operations.

20. A gas turbine engine in accordance with Claim 14 wherein said at least one airfoil winglet comprises a first winglet extending outwardly from said airfoil first side wall, and a second winglet extending outwardly from said airfoil second side wall.